How can companies address consumers who are averse to products using a novel technology?

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Researchers from IE Business School and Indian Institute of Management Shillong have published a new study that examines why

certain consumers are averse to products using a novel technology and what strategies marketers can use to remedy this aversion.

The study, which appears in the *Journal of Marketing,* is titled "Adoption of New Technology Vaccines" and is authored by Laura Zimmermann, Jeeva Somasundaram, and Barsha Saha.

In October 2023, the Food and Drug Administration (FDA) granted emergency-use authorization for the COVID-19 vaccine produced by Novavax. This was the third coronavirus vaccine available to Americans, but the only one not made with messenger RNA (mRNA) technology. The shot was marketed as an alternative for those who were skeptical of vaccines made with mRNA technology.

The COVID-19 vaccines produced by Pfizer and Moderna introduce a piece of mRNA that corresponds to a viral protein, usually one found on the outer membrane of the coronavirus. The immune system recognizes this foreign protein and produces antibodies to fight it. These antibodies remain in the body even after the pathogen has been destroyed. If exposed to the virus after receiving an mRNA-based vaccine, antibodies can quickly recognize and fight it before it causes serious illness.

The skepticism about mRNA centers around claims that it could spread itself throughout the body and alter the basic DNA of those vaccinated. This belief persists despite several leading scientists and policymakers assuring the public that the mRNA is broken down shortly after vaccination and does not stay in the body.

This new study finds that certain consumers are surprisingly averse to products described as employing a novel technology, like vaccines based on mRNA technology. The researchers investigate how consumers react to technological innovations that have the following specific features:

- When consumers cannot test and trial the new product to reduce uncertainty
- When the new product might lead to a health loss
- When other consumers' adoption of the new product might undermine the importance of the new technology

Examples of such innovations are mRNA vaccines and other pharmaceutical products, and also products such as nanoparticle pesticides, lithium-ion battery technology, and hydrogen energy.

Zimmermann explains, "We find that consumers demand higher vaccine efficacy to offset the higher perceived uncertainty that surrounds a new technology compared to a traditional vaccine. On average, our participants required a 19% higher vaccine efficacy to adopt a new technology vaccine."

This aversion was more pronounced among certain consumer segments, such as people who have little trust in their government. Consumers less inclined to embrace new technology in general were also more likely to avoid a vaccine employing new technology. Finally, consumers who are risk-averse, especially regarding small probabilities of losses, tended to show a stronger aversion to adopting a new technology vaccine.

Nudges to 'follow the herd'

One way to reduce this aversion is with a social proof nudge: to communicate that other consumers have adopted the new technology.

"When we communicated that a higher percentage of the population had adopted the new technology, people saw it as a proxy trial experience, which reduced their uncertainty. They were therefore more likely to 'follow the herd' and adopt the new technology," says Somasundaram.

But this strategy can be a double-edged sword: When people know that a high percentage of the population has taken up a vaccine, they might be less likely to vaccinate because they believe they are protected due to herd immunity.

Saha says, "Our research indicates, however, that a social proof nudge has an overall net positive effect in this context and reduces aversion to new technology vaccines." The same pattern applies to other domains such as novel energy-efficient technology (i.e., hydrogen energy heating, lithium-battery cars), nanoparticle pesticides, and other pharmaceutical products.

Lessons for marketers and policymakers

- Marketers can identify consumers with low trust in government, low technology readiness, and high aversion to risk based on their willingness to pay for insurance premiums, past purchases of high-tech products, and their age and education level.

- Companies can adjust their communication strategies to better connect with different groups of consumers by predicting how each would respond to the introduction of new technologies.

- Consumers can make more informed choices about new technology by understanding how their personal beliefs and attitudes, such as trust in government and risk preferences, as well as social proof nudges influence their choices.

- Policymakers and marketers must carefully consider the potential (long-term) risks of new technology and respect the autonomy of decision makers. This is because social proof nudges might bias information processing in ways that lead consumers to overlook uncertainty when they should not.

- When a technology's greatest need lies in communities prone to distrust (e.g., new technology pesticides for farmers in rural areas), marketers should understand the root causes of distrust, seek feedback, and focus on reducing the perceived uncertainty in a transparent fashion because exaggerated claims may contribute to further distrust.

More information: Laura Zimmermann et al, Adoption of New Technology Vaccines, *Journal of Marketing* (2023). DOI: 10.1177/00222429231220295

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